INTERFACILITY PEDIATRIC TRAUMA AND CRITICAL CARE CONSULTATION AND/OR TRANSFER GUIDELINES

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Edmund G. Brown Jr.
Governor
State of California

Diana S. Dooley
Secretary
Health and Human Services Agency

Howard Backer, MD, MPH
Director
Emergency Medical Services Authority

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TABLE OF CONTENTS

Introduction

Most ill and injured children can be successfully managed by pediatricians, emergency physicians, and other community physicians in local hospitals. However, certain types of severely ill or injured children may require specialized pediatric critical care services or specialized trauma services that are not generally available in local hospitals.

Referral centers that provide specialized pediatric critical care services or specialized trauma services for pediatric patients should be identified by local EMS agencies and included as integral components of their pediatric emergency and critical care systems and trauma care systems. These specialized referral centers provide 24-hour telephone consultation to assist community physicians in the evaluation and management of critically ill and injured children. In addition, most of these referral centers provide pediatric interfacility transport services to facilitate the transport of critically ill or injured children to specialized centers when indicated.

Decisions on when to seek consultation or to transfer pediatric patients need to be individualized, based on local needs and resources. However, children with certain categories of critical illness and injury are at high risk of death and disability. Early consultation with appropriate pediatric critical care or trauma specialists and rapid transport to specialized referral centers, when indicated, can improve the outcomes for these children.

The attached guidelines are intended for use in a number of ways:

(1) They can be used by physicians and hospitals to identify the types of critically ill or injured children who might benefit from consultation with critical care or trauma specialists or transfer to specialized referral centers. It is recommended that hospitals and their medical staffs develop appropriate policies, procedures and staff education programs based on these guidelines. This will help to promote consultation, minimize delays, and facilitate appropriate, rapid and efficient transport of critically ill and injured children to specialty centers, when indicated.

(2) It is recommended that these guidelines also be used by local EMS agencies as a basis for the development of pediatric consultation and transfer guidelines based on the local needs and resources. In accordance with California EMS System Standards and Guidelines (EMSA #101-103), consultation and transfer guidelines should be integrated into local EMS agency plans for pediatric emergency, critical care, and trauma care in each region. These guidelines should become specific EMS policies and procedures in order to promote appropriate consultation and transfer of children who require specialized pediatric critical care and/or trauma services.

(3) Finally, these guidelines may be helpful in assisting hospitals to comply with existing Federal and State patient transfer legislation.

The following guidelines are intended to assist physicians and hospitals to identify the types of critically ill and injured children who might benefit from consultation with pediatric critical care specialists or trauma specialists and transfer to specialized pediatric critical care or trauma centers, when indicated. If an interfacility transport is required, the referring physician, in consultation with the receiving physician, should determine the method of transport and appropriate personnel to accompany the child.

I. GUIDELINES FOR INTERFACILITY CONSULTATION AND/OR TRANSFER OF PEDIATRIC MEDICAL PATIENTS (NON-TRAUMA)

Consultation with pediatric medical specialists at a Pediatric Center should occur as soon as possible after evaluation of the patient. It is recommended that each hospital and its medical staff develop appropriate emergency department and inpatient guidelines, policies, and procedures for obtaining consultation and arranging transport, when indicated, for the following types of specific medical situations in pediatric patients.

A. Physiologic Criteria

1. Depressed or deteriorating neurologic status.

2. Severe respiratory distress responding inadequately to treatment and accompanied by any one of the following:

   a. Hypoxia
   b. Retractions (moderate to severe)
   c. Apnea
   d. Stridor (moderate to severe)
   e. Grunting or gasping respirations
   f. Status asthmaticus
   g. Respiratory failure
   h. Nasal Flaring

3. Children requiring endotracheal intubation and/or ventilatory support
4. Serious cardiac rhythm disturbances
5. Status post cardiopulmonary arrest
6. Heart failure
7. Shock responding inadequately to treatment or uncompensated shock
8. Children requiring any one of the following:

   a. Invasive Arterial pressure monitoring
   b. Central venous pressure or pulmonary artery monitoring
   c. Intracranial pressure monitoring
   d. Vasoactive medications

9. Severe hypothermia or hyperthermia
10. Hepatic failure
11. Renal failure requiring renal replacement therapy.
12. Bleeding disorders that require multiple transfusions and pharmacologic interventions

B. Other Criteria

1. Near drowning with persistent altered mental status, unstable vital signs, or respiratory problems.
2. Status epilepticus
3. Potentially dangerous envenomation
4. Potentially life threatening ingestion of, or exposure to, a toxic substance
5. Severe electrolyte imbalances
6. Severe metabolic disturbances
7. Severe dehydration
8. Potentially life-threatening infections, including sepsis
9. Evolving neuromuscular disorders
10. Any child who may benefit from consultation with, or transfer to, a Pediatric Critical Care Center

II. GUIDELINES FOR INTERFACILITY CONSULTATION AND/OR TRANSFER OF PEDIATRIC TRAUMA PATIENTS

Consultation with pediatric medical and surgical specialists at a Pediatric Critical Care Center or trauma specialists at a trauma center should occur as soon as possible after evaluation of the patient. It is recommended that each hospital and its medical staff develop appropriate emergency department and inpatient guidelines, policies, and procedures for obtaining consultation and arranging transport, when indicated, for the following types of pediatric medical and trauma patients.

A. Physiologic Criteria

1. Depressed or deteriorating neurologic status
2. Respiratory distress or failure
3. Children requiring endotracheal intubation and/or ventilatory support
4. Shock
5. Injuries requiring any blood transfusion
6. Children requiring any one of the following:

    a. Invasive arterial pressure monitoring
    b. Central venous pressure monitoring
    c. Intracranial pressure monitoring
    d. Vasoactive medications
7. Neurovascular deficits

B. Anatomic Criteria

1. Fractures and deep penetrating wounds to an extremity complicated by neurovascular or compartment injury
2. Fracture of two or more major long bones (i.e. femur, humerus)
3. Fracture of the axial skeleton
4. Spinal cord injuries
5. Traumatic amputation, degloving or crush injury of an extremity
6. Head injury when accompanied by any of the following:

    a. Cerebrospinal fluid leaks
    b. Open head injuries (excluding simple scalp injuries)
    c. Depressed skull fractures
    d. Intracranial hemorrhage

7. Significant penetrating wounds to the head, neck, thorax, abdomen or pelvis
8. Major pelvic fractures

9. Significant blunt injury to the chest or abdomen:

    a. hemopneumothorax
    b. pericardial effusion
    c. myocardial contusion
    d. diaphragm disruption
    e. pulmonary contusion
    f. free intraabdominal air
    g. free peritoneal fluid
    h. solid organ injury

C. Other Criteria

Any child who may benefit from consultation with, or transfer to, an appropriate Trauma Center.

D. Burns Criteria (Thermal, Chemical or Electrical) - Contact should be made with a Burn Center for children who meet any one of the following criteria:

1. Second and third degree burns of greater than 10% of the body surface area for children less than ten years of age
2. Second and third degree burns of greater than 20% of the body surface area for children over ten years of age
3. Third degree burns of greater than 5% of the body surface area for any age group

4. Burns involving:
   a. Signs or symptoms of inhalation injury
   b. Respiratory distress
   c. The face, hands, feet, genitalia, perineum, or major joints

5. Electrical injury or burns (including lightning)

6. Burns associated with trauma or complicating medical conditions

III. PEDIATRIC INTERFACILITY TRANSFER CONSULTATION AGREEMENTS

Organized systems of care for critically ill and injured children should include the identification of specialized referral centers for the care of these children. Systems should also include mechanisms that promote effective working relationships and linkages between referring hospitals and centers. Such linkages help to ensure that critically ill and injured children receive needed services, that appropriate consultation services are available, and that children are rapidly transported to specialized centers~~,~~ when indicated.

Formal transfer agreements provide a mechanism for establishing working relationships between sending hospitals and referral centers. Such agreements should establish a clear understanding of the responsibilities of the referring physicians and physicians at the center. Transfer agreements also provide a means of formalizing arrangements for consultation, transport, and education programs, including procedures that should be followed for obtaining consultation or transferring children to specialized centers.

Transfer agreements are agreements between hospitals and do not deal with medical decisions regarding whether a particular patient should be transferred or not. In addition, transfer agreements do not dictate the physician's choice as to which specific center the patient is transferred.

Organized systems of care for critically ill and injured children should include written transfer agreements between sending hospitals and specialized centers for the care of critically ill children and pediatric trauma patients. In some regions, a single agreement may be signed with a center that is both a Pediatric Critical Care Center (PCCC) and a Pediatric Trauma Center (PTC) although separate agreements may be necessary to clearly delineate the process of access to these two different treatment systems. In other regions, sending hospitals may need to sign multiple agreements with PCCCs, PTCs, or Trauma Center(s) (TCs) to meet the needs of pediatric patients.

Trauma centers have the capability to manage acute trauma in all age groups and serve as major referral centers for pediatric trauma. However, they vary in

terms of their capabilities to provide specialized services, such as intensive care services, for pediatric patients. TCs that serve as referral centers for pediatric trauma, but may lack a CCS-approved Pediatric Intensive Care Unit (PICU), should establish a transfer agreement with a referral center that has a CCS-approved PICU. Agreements should include specific guidelines for consultation and transfer of pediatric patients who require services not available at the TC.

Referring hospitals may sign agreements with any number of PCCCs, PTCs, or TCs. Pediatric transfer agreements can be developed as separate agreements or they can be included as an addendum to a hospital's general transfer agreement with a specialized referral center. For example, transfer agreements between sending hospitals and a TC might include an addendum with special provisions for consultation and transfer of pediatric patients.

Local EMS agencies should identify specialty care centers for critically ill and injured children, including the development of standards, the evaluation of the pediatric capabilities of centers, and the designation of centers for pediatric critical illness and trauma. Centers may be within the boundaries of the local EMS agency or in a contiguous area. Local EMS agencies should include written transfer agreements between sending hospitals and centers as an integral part of their system to ensure adequate access to specialized care. The attached Model Pediatric Interfacility Transfer Agreement was developed to assist PCCCs, PTCs, TCs, and local EMS agencies to develop appropriate pediatric transfer agreements for their regions.

Appendix A

MODEL PEDIATRIC INTERFACILITY TRANSFER AGREEMENT

This AGREEMENT is made between:

_____	_____
Specialized Referral Center[1]	Located
	and
_____	_____
Hospital	Located

Hence forth referred to as HOSPITAL or referring hospital.

This Agreement serves as documentation of the arrangements, policies, and procedures governing the transfer of critically ill and/or injured pediatric patients (...Add other types of patients or services, if desired...) between the above named institutions in order to facilitate timely transfer, continuity of care, and appropriate transport for these patients.

THE CENTER AND HOSPITAL DO MUTUALLY AGREE AS FOLLOWS:

1. HOSPITAL recognizes that on certain occasions pediatric patients require specialized care and services beyond the scope of services available at HOSPITAL and that optimal care of these children requires transfer from the emergency department or inpatient services to centers with specialized pediatric critical care or pediatric trauma services.

2. The medical staff and hospital administration of HOSPITAL have identified the CENTER as a pediatric referral center with specialized staff and facilities for tertiary-level care of critically ill and/or injured children.

3. The CENTER agrees to maintain a regional (Tertiary) (1) Pediatric Critical Care Center, (2) Pediatric Trauma Center or (3) Trauma Center that is equipped and staffed to provide a full range of pediatric medical and surgical services for critically ill pediatric patients and/or pediatric trauma patients in accordance with California Children Services (CCS) Pediatric Intensive Care Unit standards, or applicable State regulations and local EMS Agency standards for Pediatric Critical Care Centers, Pediatric Trauma Centers, or Trauma Centers.

[1] Specialized referral centers for pediatric critical care and/or pediatric trauma care, may include: (1) Pediatric Critical Care Center(s), (2) Pediatric Trauma Center(s), or (3) Trauma Center(s).

4. The CENTER agrees to accept transfers of critically ill and injured pediatric patients from HOSPITAL if beds, personnel, and appropriate services are available, if the transfer has been approved by the receiving physician, and if the transfer is consistent with current patient transfer laws.

5. Pursuant to CCS requirements for Tertiary Hospital level Approval and State Trauma System regulations, CENTERS will provide 24-hour telephone consultation services, 24-hour pediatric transport services, and educational programs related to pediatric emergency, critical care, and/or trauma care that can be made available to community health professionals involved in such care.

6. HOSPITAL and CENTER recognize the privilege of an attending physician and the right of the patient, or the patient through a relative or guardian, to request transfer to an alternate facility.

Indications for Pediatric Transfers

7. The referring physician has examined the patient, documented the patient's condition, and has determined that the patient requires a higher level of care than provided at HOSPITAL or requires specialized services provided at the CENTER.

8. The referring physician has evaluated the patient and has determined that the transport and level of care provided during transport is compatible with the patient's condition and is in the best interests of the patient's medical care.

Transfer Arrangements

9. Requests for consultation or transport team support and patient transfer can be generated by telephone to:
(List appropriate telephone numbers for pediatric critical care, trauma, transport, and other services, as appropriate.)

10. When it appears that a pediatric patient requires specialized services or medical care beyond the scope of services provided at HOSPITAL, the referring physician shall contact an appropriate specialist at the CENTER to obtain consultation. The referring physician in conjunction with the CENTER consultant shall be responsible for determining the need for admission to the CENTER. The consent of appropriately authorized staff at the CENTER to receive the patient shall be obtained prior to the patient's release from HOSPITAL and shall be documented in the patient's medical record.

11. Transfer arrangements will be made by mutual consent of the referring and consulting physician. It shall be the responsibility of the physician to whom the patient is transferred to arrange the admission of the patient to the CENTER. If the CENTER is unable to accept the patient because of lack of physical or professional

resources, the CENTER personnel will assist the referring hospital in locating an alternative center for patient placement.

12. The referring physician, in consultation with the receiving physician, shall determine the method of transport to be used. The CENTER may, at its option, provide a specially-trained pediatric transport team.

13. To the extent possible, patients will be stabilized prior to transfer and treatment initiated to ensure that the transfer will not, within reasonable medical probability, result in harm to the patient or jeopardize survival.

14. The referring hospital shall be responsible for informing the patient, patient's parent(s), legal guardian, or other relatives of the transfer process and for obtaining any release to affect the transfer. The referring hospital shall use its best efforts to arrange for the parent(s) or guardian to be present at the time of transport.

15. The referring hospital shall be responsible for the transfer or other appropriate disposition of any personal belongings of the patient.

<u>Records and Transmission of Information</u>

16. Subject to federal and state laws regarding consents of minors for medical care and confidentiality of medical information the referring hospital shall send with the patient, or arrange to be immediately transmitted (via FAX), at the time of transfer the necessary documents and completed forms containing the medical, social, and/or other information necessary to ensure continuity of care to the patient. Such documentation shall include at least the following:

    a. Identification of the patient
    b. Diagnoses
    c. Copies of the relevant portions of the patient's medical record (including medical, nursing, dietary, laboratory, X-rays, and medication records)
    d. Relevant transport forms
    e. Copy of signed consent for transport of a minor

17. Subject to limitations regarding confidentiality, the CENTER shall provide information on the patient's diagnosis, condition, treatment, prognosis, and any complications to the referring physician during the time that the patient is hospitalized at the CENTER and upon discharge or transfer from the CENTER.

<u>Return of Patient to Referring Hospital</u>

18. When the patient's physician at the CENTER determines that the patient is medically fit for return to the referring hospital, that physician should contact an appropriate physician at the referring hospital to arrange for the return of the patient. The CENTER shall send with the patient at the time of transfer the necessary documents

and forms containing the medical, social, and/or other information necessary to ensure continuity of care to the patient. The CENTER shall be responsible for informing the patient, patient's parent(s) or legal guardian of the transfer process and for obtaining any releases required for the transfer or the appropriate disposition of any personal effects of the patient. The CENTER will be responsible for arranging patient transport to referring hospital.

19. The return transfer of pediatric patient for continued care upon completion of the treatment at the CENTER will be made by mutual agreement.

Charges for Services

20. Charges for services performed by either institution shall be made and collected by the institution in accordance with its regular policies and procedures. Unless special arrangements have been made to the contrary, the transfer of a patient from one institution to the other shall not be construed as imposing any financial liability by one institution on the other. The parties shall cooperate with each other in the exchange of information about financial responsibility for the services rendered by them to patients who are transferred to the CENTER.

Authority of Governing Bodies

21. The Governing Body of each institution shall have exclusive control of its policies, management, assets and affairs, and neither shall incur any responsibility by virtue of this Agreement for any debts or other financial obligations incurred by the other. Further, nothing in this Agreement shall be construed as limiting the rights of either institution to contract with any other facility on a limited or general basis.

Term of Agreement

22. The term of this Agreement shall commence on _____ and shall continue in full force and effect until _____. Either institution may terminate this Agreement at any time upon giving the other written notice not less than thirty (30) days in advance of the termination date.

However, should either institution fail to maintain its license or certification, this Agreement shall automatically terminate as of the date of termination of the license or certification.

Indemnification

23. The parties agree to indemnify, defend and hold one another, their officers, agents and employees harmless from and against any and all liability, loss, expense, attorney's fees, or claims for injury or damages arising out of their performance of this Agreement, but only in proportion to and to the extent such liability, loss, expense, attorney's fees, or claims for injury or damages are caused by or result from the negligent or intentional act or omission of the indemnifying party.

Compliance with Laws and Regulations

24. This Agreement is entered into and shall be performed by both parties in compliance with local, state and federal laws, rules, regulations, and guidelines, including COBRA and OBRA.

Insurance Provisions

25. The parties hereto warrant they shall obtain and maintain during the term hereof, at their own sole cost and expense, insurance or a program of self insurance covering their activities in performance hereof.

General Provisions

26. This Agreement constitutes the entire understanding of the parties hereto with respect to the matters discussed herein and supersedes any and all written or oral agreements, representations or understandings, whether made by the parties or others purportedly on behalf of one of the parties. No changes, amendments, or alterations of this Agreement shall be effective, unless made in writing and signed by both parties.

27. It is not the intention of either party that any person or entity be a third party beneficiary of this Agreement.

28. Neither party may assign, sell, or otherwise transfer this Agreement, or any interest in it, without the express prior written approval of the other.

29. Any notice required or permitted by this Agreement shall be effective and shall be deemed delivered five (5) business days after placing it in the mail, by certified mail, return receipt requested, postage prepaid, or upon personal delivery as follows:

To: Administrator
CENTER
Address

To: Administrator
HOSPITAL
Address

IN WITNESS WHEREOF, the parties have executed this Agreement of the date written below.

HOSPITAL (Name and Address)	Center (Name and Address)
_____	_____
_____	_____
_____	_____
Chief Executive Officer	Chief Executive Officer
Name _____	Name _____
Title _____	Title _____
Date _____	Date _____
_____	_____
Chief of Medical Staff	Chief of Medical Staff
_____	_____
Chief of Pediatrics	Chief of Pediatrics
	_____
	Chief of Trauma Service
_____	_____
Chief of Emergency Medicine	Medical Director of Emergency Dept.

Appendix B

Suggested Readings

Pediatric Consultation/Transfer Guidelines

1. Seidel, JS: EMSC In Urban and Rural Areas: The California Experience - Pediatric Critical Care Center Transport Criteria. Emergency Medical Services for Children, Report of the 97th Ross Conference on Pediatric Research, Ross Laboratories, Columbus Ohio; 1989.

2. California Children services (CCS) Program, Manual of Procedures, Chapter 3.32, issue date January 1, 1999. It is also located in CCS Numbered Letter 29-1298, Subject: CCS Pediatric Intensive Care Unit (PICU) Standards.

3. Committee on Trauma, American College of Surgeons: Resources for Optimal Care of the Injured Patient. American College of Surgeons; 2006.

Acknowledgements

EMS for Children Technical Advisory Committee

Art Andres, EMT-P Ontario Fire Department	Howard Backer, MD, MPH State of CA EMS Authority	B.J. Bartleson, RN California Hospital Association
Donna Black State of CA Office of Traffic Safety	Patrice Christensen, RN San Mateo County EMS Agency	Bernard Dannenberg, MD, FAAP, FACEP Lucile Packard Children's Hospital
Ronald Dieckmann, MD Pediatric & Emergency Medicine	Robert Dimand, MD State of CA, Children Services	Erin Dorsey, RN, BSN, PHN Long Beach Unified School District
Jan Fredrickson, RN, MSN CA State Emergency Nurses Association	Marianne Gausche-Hill, MD, FACEP, FAAP Harbor UCLA Medical Center	Jim Harley, MD, MPH Rady Children's Hospital San Diego
Ramon Johnson, MD, FACEP, FAAP Emergency Medicine Associates	James Marcin, MD, MPH UC Davis Medical Center Pediatric Critical Care	Tammi McConnell, RN Orange County EMS Agency
Tom McGinnis, EMT-P State of CA EMS Authority	Nancy McGrath, RN, CPNP Harbor UCLA Medical Center	Maureen McNeil Public Member
Farid Nasr, MD State of CA EMS Authority	Michael Osur, MBA Riverside County Dept. of Public Health	Victoria Pinette, MS Sierra-Sacramento Valley EMS Agency
Kate Remick, MD Harbor UCLA Medical Center	Nicholas Saenz, MD Rady Children's Hospital of San Diego	Bonnie Sinz, RN State of CA EMS Authority
Debra Smades-Henes Family Representative Public Member	Daniel R. Smiley State of CA EMS Authority	Sam Stratton, MD Orange County EMS Agency
Richard Watson Public Member		